

**TABLE 1
LENGTH**

DART LONGLINE PART NUMBER CODE	LENGTH (FEET)
DLL-A-#-#-#	25
DLL-B-#-#-#	50
DLL-C-#-#-#	75
DLL-D-#-#-#	100
DLL-E-#-#-#	125
DLL-F-#-#-#	150
DLL-G-#-#-#	175
DLL-H-#-#-#	200

**TABLE 2
CAPACITY**

DART LONGLINE PART NUMBER CODE	CAPACITY (LBS)
DLL-#-A-#-#	2500
DLL-#-B-#-#	3000
DLL-#-C-#-#	4400
DLL-#-D-#-#	5400
DLL-#-E-#-#	7300
DLL-#-F-#-#	9700
DLL-#-G-#-#	13 200
DLL-#-H-#-#	15 700

**TABLE 3
END HARDWARE OPTION**

DART LONGLINE PART NUMBER CODE	OPTION DESCRIPTION
DLL-#-#-A-#	WITH PEAR SHAPED LIFTING RING
DLL-#-#-B-#	WITHOUT PEAR SHAPED LIFTING RING

**TABLE 4
ELECTRICAL**

DART LONGLINE PART NUMBER CODE	ELECTRICAL WIRE DESCRIPTION
DLL-#-#-#-A	2 CONDUCTOR 16 GA
DLL-#-#-#-B	3 CONDUCTOR 16 GA
DLL-#-#-#-C	4 CONDUCTOR 16 GA
DLL-#-#-#-D	5 CONDUCTOR 16 GA
DLL-#-#-#-E	6 CONDUCTOR 16 GA
DLL-#-#-#-F	8 CONDUCTOR 16 GA
DLL-#-#-#-G	3 CONDUCTOR 12 GA
DLL-#-#-#-H	4 CONDUCTOR 14 GA
DLL-#-#-#-I	NO ELECTRICAL

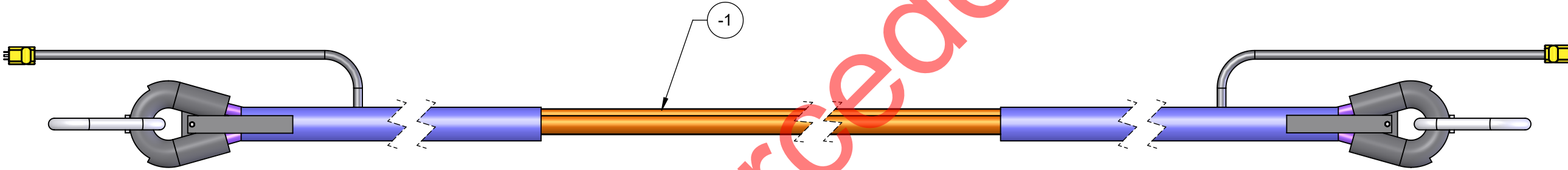
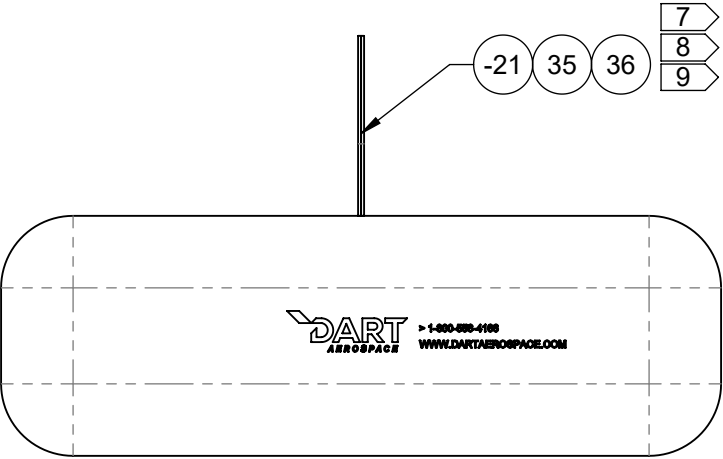
DLL - # - # - # - #

PART NUMBER = DLL- (LENGTH P/N CODE) - (CAPACITY P/N CODE) - (END HARDWARE P/N CODE) - (ELECTRICAL P/N CODE)

EXAMPLE: DLL-D-A-A-A = DART LONG LINE, 100 FEET LONG, 2500 LBS CAPACITY, WITH PEAR SHAPED LIFTING RING AND 2 CONDUCTOR 16 GAUGE WIRE

A	NEW ISSUE	18-585	VM
REV.	DESCRIPTION	ECN #	BY
DESIGN	VM	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	VM		
CHECKED	VM	TOOL PART #	REV. A
MFG. APPR.	DD	DLL-#-#-#	SHEET 1 OF 21
APPROVED	ML	TITLE	SCALE
DATE 5/17/2018		DART LONG LINE	NTS
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ITEM #	QTY	PART #	PART TITLE
-1	1	DLL-#-#-#-1	DART LONG LINE
-21	1	DLL-#-#-#-21	DART AEROSPACE BAG
35	2	McMaster#1632T22 OR EQUIV	ID TAG
36	2	McMaster#90905A673 OR EQUIV	SS SPLIT RING 1-1/16" OD.



~~DLL-#-#-#~~ DART LONG LINE

NOTES:
1) MATERIAL: N/A
2) HEAT TREAT: N/A
3) FINISH: N/A
4) TOLERANCES: X = +/- 1"
X.X = +/- 0.5"
X.XX = +/- 0.25"
UNLESS OTHERWISE NOTED
5) UNITS: INCHES / LBS UNLESS OTHERWISE NOTED
6) BREAK SHARP EDGES: N/A
7) IDENTIFICATION: DOT MARK THE FOLLOWING INFO ONTO BOTH ID TAGS: P/N: DLL-#-#-#
W/O: XXXXXX
S/N: XXXXXX
DATE: DD/MM/YYYY

8) ATTACH ONE ID TAG TO THE BAG ZIPPER WITH THE SPLIT RING AND PLACE THE OTHER ID TAG INTO THE BAGS SIDE POCKET
9) COIL ROPE INTO BAG

DESIGN	VM	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	VM		
CHECKED	VM	TOOL PART #	REV. A
MFG. APPR.	DD	DLL-#-#-#	SHEET 2 OF 21
APPROVED	ML	TITLE	SCALE
DATE 5/17/2018		DART LONG LINE	NTS
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1

ITEM #	QTY	PART #	PART TITLE
-2	1	DLL-#-#-#-2	ROPE ASSY
-8	1	DLL-#-#-#-8	ORANGE JACKET ASSY
-14	A/R	DLL-#-#-#-14	ELECTRICAL WIRE
-15	2	DLL-#-#-#-15	BLUE JACKET ASSY
37	1	PASS & SEYMOUR #PS5969Y or McMaster#7216K6	3 PRONG FEMALE SPADE PLUG
38	1	PASS & SEYMOUR #PS5965Y or McMaster#7216K5	3 PRONG MALE SPADE PLUG
39	2	AN3-10A	BOLT
40	4	NAS1149F0363P	FLAT WASHER
41	2	MS21044N3	HEX NUT

C

B

A

D

C

B

A

38
9
11

-14
11

-15 OMITED ON OPPOSITE SIDE FOR CLARITY

-8

37
9
11

75±10
2 PL

8

39
40 2 PL
41 10

SAME ON OPOSITE SIDE OF DART LONGLINE

DLL-#-#-#-1 DART LONG LINE

NOTES:

1) MATERIAL: N/A

2) HEAT TREAT: N/A

3) FINISH: N/A

4) TOLERANCES: X = +/- 1"

X.X = +/- 0.5"

X.XX = +/- 0.25"

UNLESS OTHERWISE NOTED

5) UNITS: INCHES / LBS UNLESS OTHERWISE NOTED

6) BREAK SHARP EDGES: N/A

7) IDENTIFICATION: N/A

8) CUT ELECTRICAL WIRE TO LENGTH AS SHOWN

9) INSTALL ITEM 37 AND 38 USING INDUSTRY STANDARD TECHNIQUES. ATTACH GREEN WIRE (IF APPLICABLE) TO THE GROUND PIN, ATTACH WHITE WIRE TO THE NARROW BLADE TERMINAL, ATTACH THE BLACK WIRE TO THE WIDE BLADE TERMINAL. ONLY INCLUDE ITEM 37 AND 38 WITH DLL-#-#-#-A AND DLL-#-#-#-B

10) TIGHTEN NUT UNTIL IT CONTACTS FABRIC (MUST PERMIT FABRIC TO MOVE FREELY AND NUT MUST BE IN SAFETY)

11) ELECTRICAL CABLE MUST BE FREE OF DAMAGE OR NICKS TO THE INSULATION ELECTRICAL CONNECTORS MUST BE SECURELY INSTALLED. PERFORM CONTINUITY CHECK TO ENSURE THERE IS NO SHORT AND THAT CABLES ARE CONNECTED PROPERLY

12) SEW A WHITE FABRIC LABEL ONTO THE DLL-#-#-#-15 BLUE JACKET APPROXIMATELY AS SHOWN. THE LABEL MUST INCLUDE THE FOLLOWING: DART AEROSPACE LTD.
P/N: DLL-#-#-#-
S/N:
DATE: DD/MM/YYYY

DESIGN

VM

DRAWN

VM

CHECKED

VM

MFG. APPR.

DD

APPROVED

ML

DATE

5/17/2018

DART AEROSPACE LTD

HAWKESBURY, ONTARIO, CANADA

TOOL PART #

DLL-#-#-#

TITLE

DART LONG LINE

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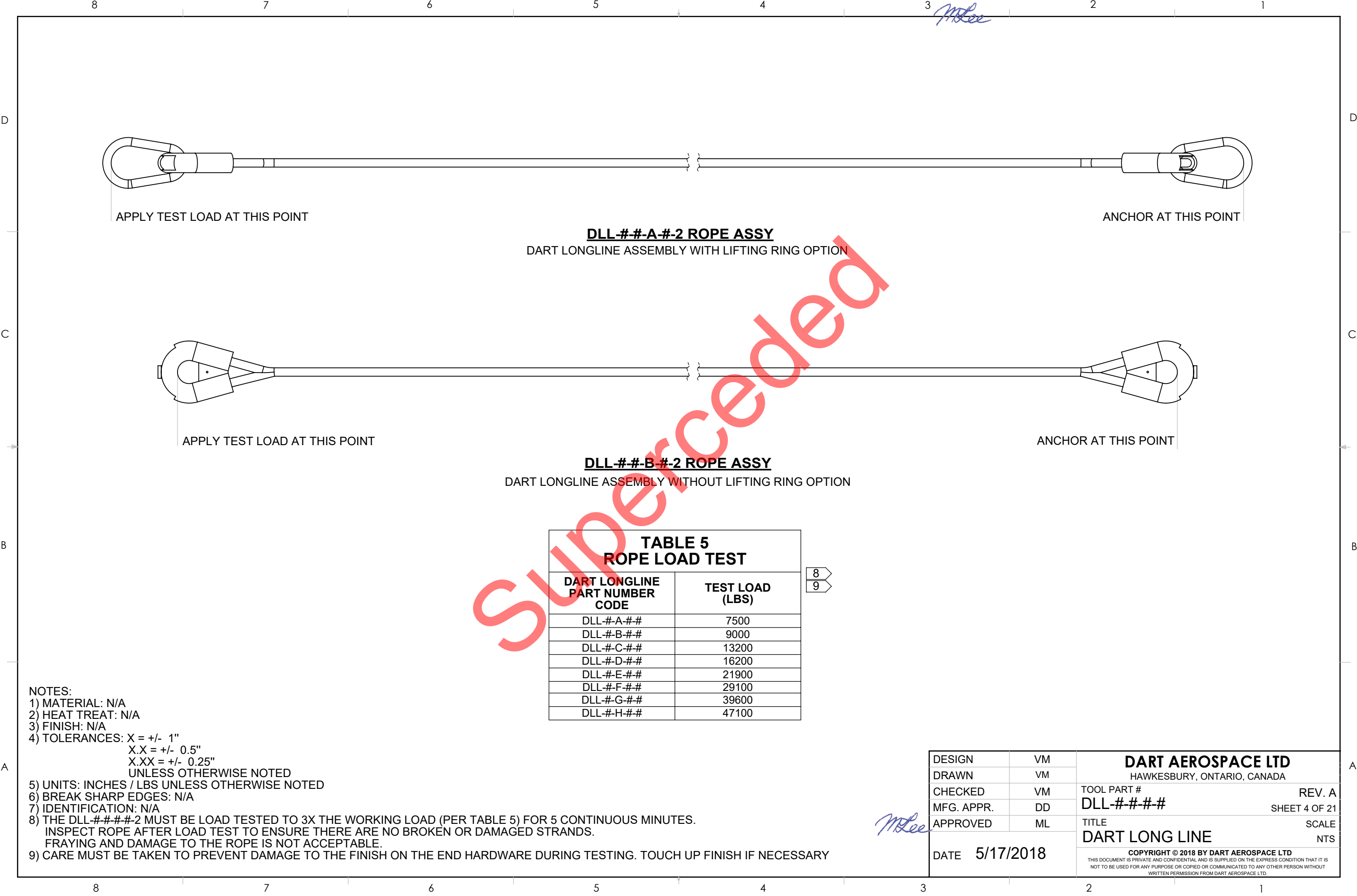
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REV. A

SHEET 3 OF 21

SCALE

NTS

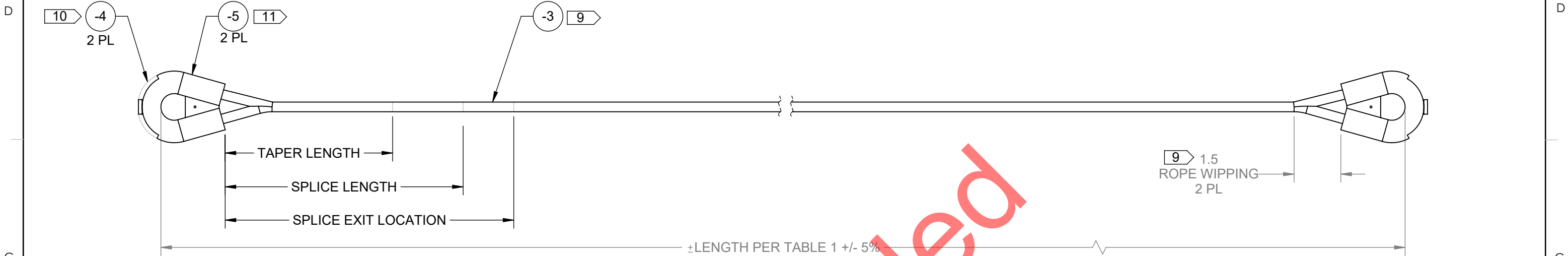


- NOTES:
- 1) MATERIAL: N/A
 - 2) HEAT TREAT: N/A
 - 3) FINISH: N/A
 - 4) TOLERANCES: X = +/- 1"
X.X = +/- 0.5"
X.XX = +/- 0.25"
UNLESS OTHERWISE NOTED
 - 5) UNITS: INCHES / LBS UNLESS OTHERWISE NOTED
 - 6) BREAK SHARP EDGES: N/A
 - 7) IDENTIFICATION: N/A
 - 8) THE DLL-##-##-2 MUST BE LOAD TESTED TO 3X THE WORKING LOAD (PER TABLE 5) FOR 5 CONTINUOUS MINUTES.
INSPECT ROPE AFTER LOAD TEST TO ENSURE THERE ARE NO BROKEN OR DAMAGED STRANDS.
FRAYING AND DAMAGE TO THE ROPE IS NOT ACCEPTABLE.
 - 9) CARE MUST BE TAKEN TO PREVENT DAMAGE TO THE FINISH ON THE END HARDWARE DURING TESTING. TOUCH UP FINISH IF NECESSARY

TABLE 5 ROPE LOAD TEST	
DART LONGLINE PART NUMBER CODE	TEST LOAD (LBS)
DLL-#-A-##	7500
DLL-#-B-##	9000
DLL-#-C-##	13200
DLL-#-D-##	16200
DLL-#-E-##	21900
DLL-#-F-##	29100
DLL-#-G-##	39600
DLL-#-H-##	47100

DESIGN	VM	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	VM		
CHECKED	VM	TOOL PART #	REV. A
MFG. APPR.	DD	DLL-##-##-#	SHEET 4 OF 21
APPROVED	ML	TITLE	SCALE
DATE 5/17/2018		DART LONG LINE	NTS
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ITEM #	QTY	PART #	PART TITLE
-3	1	DLL-###-#-3	ROPE
-4	2	DLL-###-#-4	FABRIC WEARPAD
-5	2	DLL-###-#-5	THIMBLE ASSY



DLL-###-#-2 ROPE ASSY
(SHOWN ASSEMBLED)

TABLE 6 FABRICATION MEASUREMENTS				
DART LONGLINE PART NUMBER CODE	SPLICE LENGTH (INCHES)	TAPER LENGTH (INCHES)	SPLICE EXIT LOCATION (INCHES)	THIMBLE CIRCUMFERENCE (INCHES)
DLL-#-A-##	25	8	30	9
DLL-#-B-##	30	10	35	10
DLL-#-C-##	35	10	40	10
DLL-#-D-##	40	13	50	10
DLL-#-E-##	45	13	55	14
DLL-#-F-##	50	16	65	14
DLL-#-G-##	60	20	75	17
DLL-#-H-##	65	22	85	21

- NOTES:
- 1) MATERIAL: N/A
- 2) HEAT TREAT: N/A
- 3) FINISH: N/A
- 4) TOLERANCES: X = +/- 1"
X.X = +/- 0.5"
X.XX = +/- 0.25"
UNLESS OTHERWISE NOTED
- 5) UNITS: INCHES / LBS UNLESS OTHERWISE NOTED
- 6) BREAK SHARP EDGES: N/A
- 7) IDENTIFICATION: N/A
- 8) ROPE CUT LENGTH FORMULA = (SPLICE LENGTH PER TABLE 6 + 3" + THIMBLE CIRCUMFERENCE PER TABLE 6) + (REQUIRED TOTAL LENGTH - 1%)
- 9) PREPARE THE ROPE SPLICE AS FOLLOWS:
- A) MEASURING FROM THE END OF THE ROPE, MARK THE SPLICE LENGTH, TAPER LENGTH AND EXIT LOCATION PER TABLE 6
- B) PASS THE ROPE THROUGH THE THIMBLE AND FABRIC WEARPAD UNTIL THE SPLICE LENGTH MARK IS 1.5" FROM THE BASE OF THE THIMBLE
- C) MAKE A MARK 1.5" FROM THE BASE OF THE THIMBLE ON THE OTHER SIDE OF THE ROPE (BESIDE THE FIRST SPLICE LENGTH MARK)
- D) PLACE THE END OF THE ROPE IN THE SPLICING FID
- E) AT THE LOCATION MARKED AT STEP "C", CAREFULLY INSERT THE SPLICING FID IN THE CENTER OF THE ROPE
- F) WORK THE SPLICING FID ALONG THE HOLLOW CENTER OF THE ROPE AND EXIT AT THE SPLICE EXIT LOCATION MARK MADE EARLIER
- G) REMOVE THE SPLICING FID
- H) MARK EVERY FOURTH "S" / "Z" STRAND STARTING AT THE TAPER MARK. CUT AND REMOVE THE MARKED STRANDS
- I) MARK AND THEN CUT THE NEXT THREE CONSECUTIVE STRANDS NEAR THE END OF THE ROPE
- J) CUT THE TIP OF THE REMAINING STRANDS AT AN ANGLE
- K) CAREFULLY SMOOTH THE ROPE AWAY FROM THE THIMBLE (THE TAPER WILL NOW BE INSIDE OF THE ROPE)
- L) ENSURE THE MARKS CLOSEST TO THE THIMBLE ARE ALIGNED (APPROXIMATELY 1.5" FROM THE BASE OF THE THIMBLE)
- M) ONCE THE ROPE SPLICE IS COMPLETE THE ROPE MUST BE TIGHTLY "WHIPPED" AT APPROXIMATELY 1.5" FROM THE BASE OF THE THIMBLE USING 5-10 WRAPS OF 1/16" CORD.
- N) REPEAT THE STEPS ABOVE ON THE OPPOSITE SIDE OF THE LONGLINE.
- 10) THE -4 FABRIC WEARPAD MUST BE MANUFACTURED FROM ABRASION RESISTANT NYLON OR ARAMID FABRIC. THE WEARPAD MUST TIGHTLY FIT AROUND THE ROPE AND EXTEND 1.0" BELOW THE BASE OF THE THIMBLE
- 11) BOTH DLL-###-#-5 THIMBLES MUST HAVE THE SAME FINISH (BOTH BLACK ZINC OR BOTH PRIME/PAINT)

DESIGN	VM	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	VM		
CHECKED	VM	TOOL PART #	REV. A
MFG. APPR.	DD	DLL-###-#	SHEET 5 OF 21
APPROVED	ML	TITLE	SCALE
DATE 5/17/2018		DART LONG LINE	NTS
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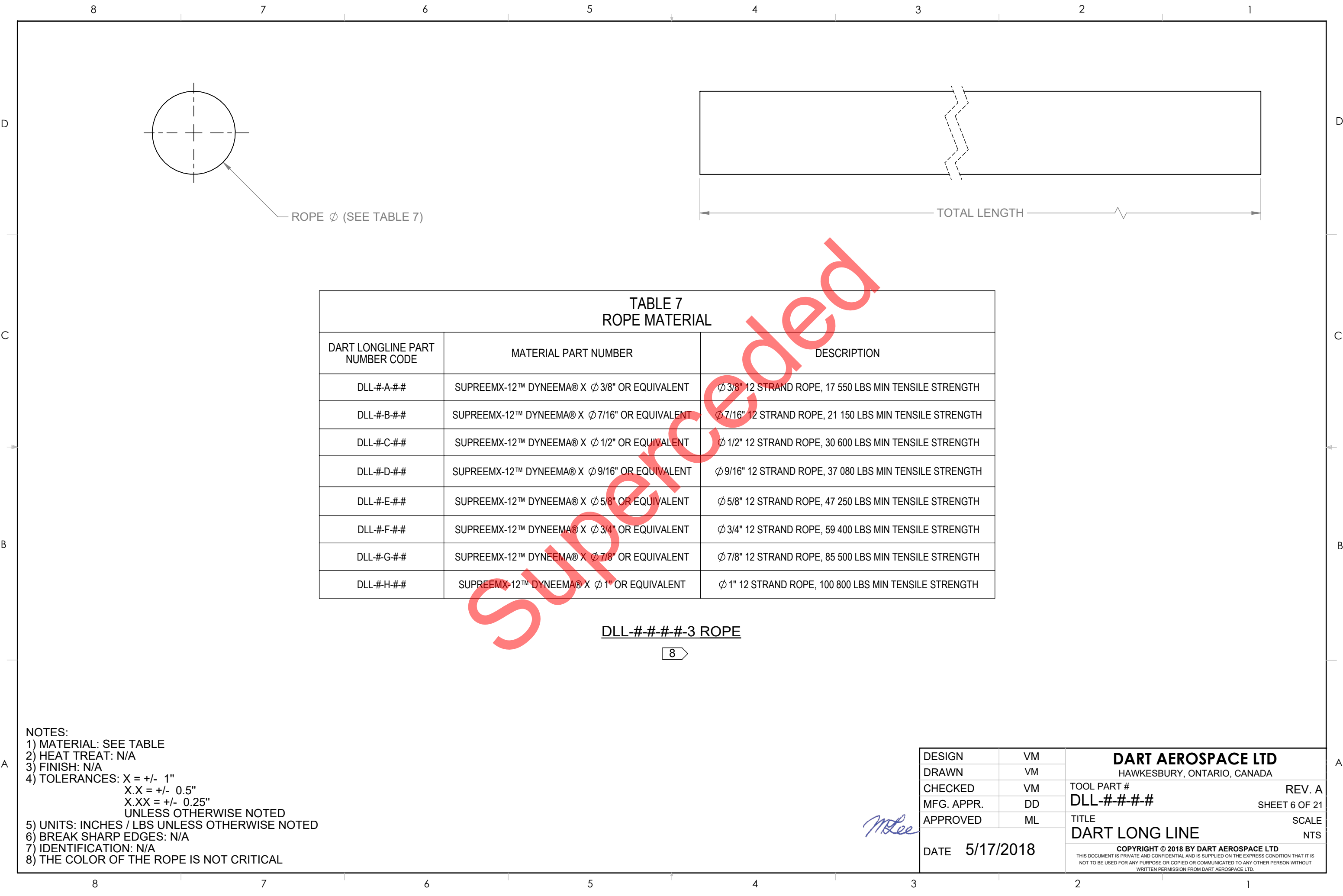


TABLE 7 ROPE MATERIAL		
DART LONGLINE PART NUMBER CODE	MATERIAL PART NUMBER	DESCRIPTION
DLL-#-A-##	SUPREEMX-12™ DYNEEMA® X Ø 3/8" OR EQUIVALENT	Ø 3/8" 12 STRAND ROPE, 17 550 LBS MIN TENSILE STRENGTH
DLL-#-B-##	SUPREEMX-12™ DYNEEMA® X Ø 7/16" OR EQUIVALENT	Ø 7/16" 12 STRAND ROPE, 21 150 LBS MIN TENSILE STRENGTH
DLL-#-C-##	SUPREEMX-12™ DYNEEMA® X Ø 1/2" OR EQUIVALENT	Ø 1/2" 12 STRAND ROPE, 30 600 LBS MIN TENSILE STRENGTH
DLL-#-D-##	SUPREEMX-12™ DYNEEMA® X Ø 9/16" OR EQUIVALENT	Ø 9/16" 12 STRAND ROPE, 37 080 LBS MIN TENSILE STRENGTH
DLL-#-E-##	SUPREEMX-12™ DYNEEMA® X Ø 5/8" OR EQUIVALENT	Ø 5/8" 12 STRAND ROPE, 47 250 LBS MIN TENSILE STRENGTH
DLL-#-F-##	SUPREEMX-12™ DYNEEMA® X Ø 3/4" OR EQUIVALENT	Ø 3/4" 12 STRAND ROPE, 59 400 LBS MIN TENSILE STRENGTH
DLL-#-G-##	SUPREEMX-12™ DYNEEMA® X Ø 7/8" OR EQUIVALENT	Ø 7/8" 12 STRAND ROPE, 85 500 LBS MIN TENSILE STRENGTH
DLL-#-H-##	SUPREEMX-12™ DYNEEMA® X Ø 1" OR EQUIVALENT	Ø 1" 12 STRAND ROPE, 100 800 LBS MIN TENSILE STRENGTH

DLL-#-#-#-3 ROPE

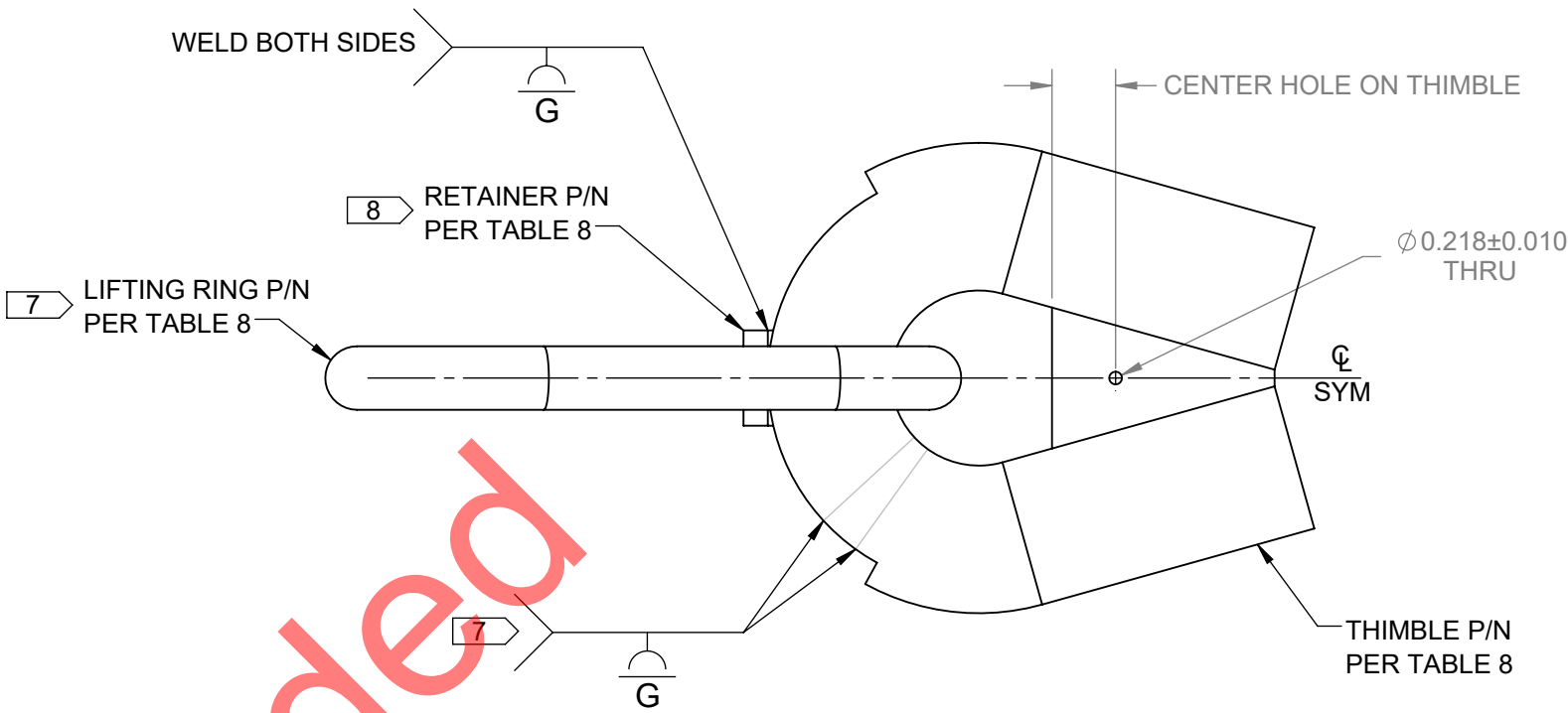
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NOTES:
1) MATERIAL: SEE TABLE
2) HEAT TREAT: N/A
3) FINISH: N/A
4) TOLERANCES: X = +/- 1"
 X.X = +/- 0.5"
 X.XX = +/- 0.25"
 UNLESS OTHERWISE NOTED
5) UNITS: INCHES / LBS UNLESS OTHERWISE NOTED
6) BREAK SHARP EDGES: N/A
7) IDENTIFICATION: N/A
8) THE COLOR OF THE ROPE IS NOT CRITICAL

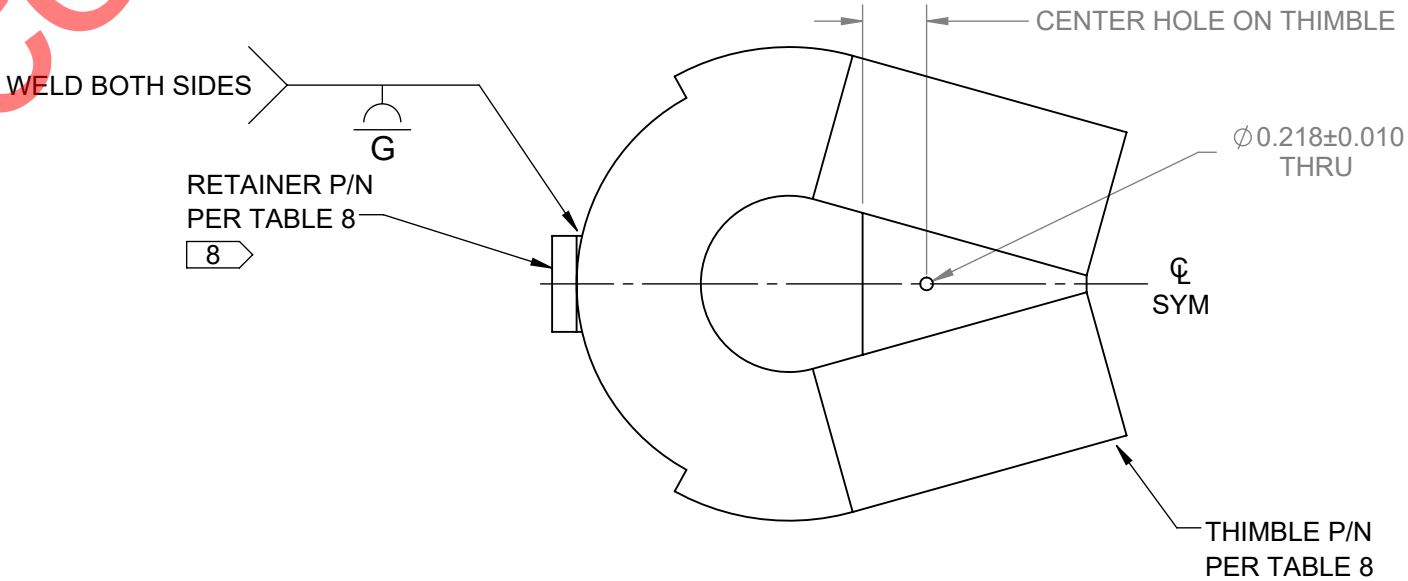
DESIGN	VM	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	VM		
CHECKED	VM	TOOL PART #	REV. A
MFG. APPR.	DD	DLL-#-#-#-#	SHEET 6 OF 21
APPROVED	ML	TITLE	SCALE
DATE 5/17/2018		DART LONG LINE	NTS
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TABLE 8 END HARDWARE				
DART LONGLINE PART NUMBER CODE	THIMBLE PART NUMBER	LIFTING RING PART NUMBER (McMASTER CARR)	RETAINER PART NUMBER	DESCRIPTION
DLL-#-A-A-#	G715K BLUE LINE THIMBLE OR EQUIVALENT	3570T34 OR EQUIVALENT	DLL-#-#-#-22	THIMBLE WITH 1/2" PEAR RING
DLL-#-B-A-#	G719K BLUE LINE THIMBLE OR EQUIVALENT	3570T34 OR EQUIVALENT	DLL-#-#-#-23	THIMBLE WITH 1/2" PEAR RING
DLL-#-C-A-#	G719K BLUE LINE THIMBLE OR EQUIVALENT	3570T35 OR EQUIVALENT	DLL-#-#-#-24	THIMBLE WITH 3/4" PEAR RING
DLL-#-D-A-#	G719K BLUE LINE THIMBLE OR EQUIVALENT	3570T35 OR EQUIVALENT	DLL-#-#-#-25	THIMBLE WITH 3/4" PEAR RING
DLL-#-E-A-#	G728K BLUE LINE THIMBLE OR EQUIVALENT	3570T35 OR EQUIVALENT	DLL-#-#-#-26	THIMBLE WITH 3/4" PEAR RING
DLL-#-F-A-#	G728K BLUE LINE THIMBLE OR EQUIVALENT	3570T35 OR EQUIVALENT	DLL-#-#-#-27	THIMBLE WITH 3/4" PEAR RING
DLL-#-G-A-#	G735K BLUE LINE THIMBLE OR EQUIVALENT	3570T35 OR EQUIVALENT	DLL-#-#-#-28	THIMBLE WITH 3/4" PEAR RING
DLL-#-H-A-#	G745K BLUE LINE THIMBLE OR EQUIVALENT	3570T36 OR EQUIVALENT	DLL-#-#-#-29	THIMBLE WITH 1" PEAR RING
DLL-#-A-B-#	G715K BLUE LINE THIMBLE OR EQUIVALENT	N/A	DLL-#-#-#-22	THIMBLE ONLY
DLL-#-B-B-#	G719K BLUE LINE THIMBLE OR EQUIVALENT	N/A	DLL-#-#-#-23	THIMBLE ONLY
DLL-#-C-B-#	G719K BLUE LINE THIMBLE OR EQUIVALENT	N/A	DLL-#-#-#-24	THIMBLE ONLY
DLL-#-D-B-#	G719K BLUE LINE THIMBLE OR EQUIVALENT	N/A	DLL-#-#-#-25	THIMBLE ONLY
DLL-#-E-B-#	G728K BLUE LINE THIMBLE OR EQUIVALENT	N/A	DLL-#-#-#-26	THIMBLE ONLY
DLL-#-F-B-#	G728K BLUE LINE THIMBLE OR EQUIVALENT	N/A	DLL-#-#-#-27	THIMBLE ONLY
DLL-#-G-B-#	G735K BLUE LINE THIMBLE OR EQUIVALENT	N/A	DLL-#-#-#-28	THIMBLE ONLY
DLL-#-H-B-#	G745K BLUE LINE THIMBLE OR EQUIVALENT	N/A	DLL-#-#-#-29	THIMBLE ONLY

- NOTES:
1) MATERIAL: N/A
2) HEAT TREAT: N/A
3) FINISH: ZINC PLATE (BLACK) PER ASTM B633 TYPE 2 CLASS 2,
OR PRIME PER QSI 005 4.2.1.3.2 AND PAINT BLACK PER QSI 005 4.2.2.3
4) TOLERANCES: X = +/- 1"
X.X = +/- 0.5"
X.XX = +/- 0.25"
UNLESS OTHERWISE NOTED
5) UNITS: INCHES / LBS UNLESS OTHERWISE NOTED
6) BREAK SHARP EDGES: N/A
7) CUT THE THIMBLE APPROXIMATELY AS SHOWN, REMOVING THE MINIMUM AMOUNT OF MATERIAL NECESSARY IN ORDER TO INSTALL THE LIFTING RING.
INSTALL LIFTING RING INTO THIMBLE OPENING. REWELD THE PREVIOUSLY REMOVED PORTION OF THE THIMBLE INTO POSITION AND GRIND ALL WELDS
FLUSH WITH THE SURFACE.
8) WELD THE RETAINER INTO POSITION AND GRIND ALL WELDS FLUSH WITH THE SURFACE.
9) REMOVE FINISH FROM THIMBLE AND PEAR RING (IF APPLICABLE) PRIOR TO WELDING
10) REMOVE FACTORY MARKINGS FROM THIMBLE MAX 0.015 DEEP



DLL-#-A-#-5 THIMBLE ASSY
DART LONGLINE ASSEMBLY WITH LIFTING RING OPTION



DLL-#-B-#-5 THIMBLE ASSY
DART LONGLINE ASSEMBLY WITHOUT LIFTING RING OPTION

DESIGN	VM	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	VM		
CHECKED	VM	TOOL PART #	REV. A
MFG. APPR.	DD	DLL-#-#-#	SHEET 7 OF 21
APPROVED	ML	TITLE	SCALE
DATE 5/17/2018		DART LONG LINE	NTS
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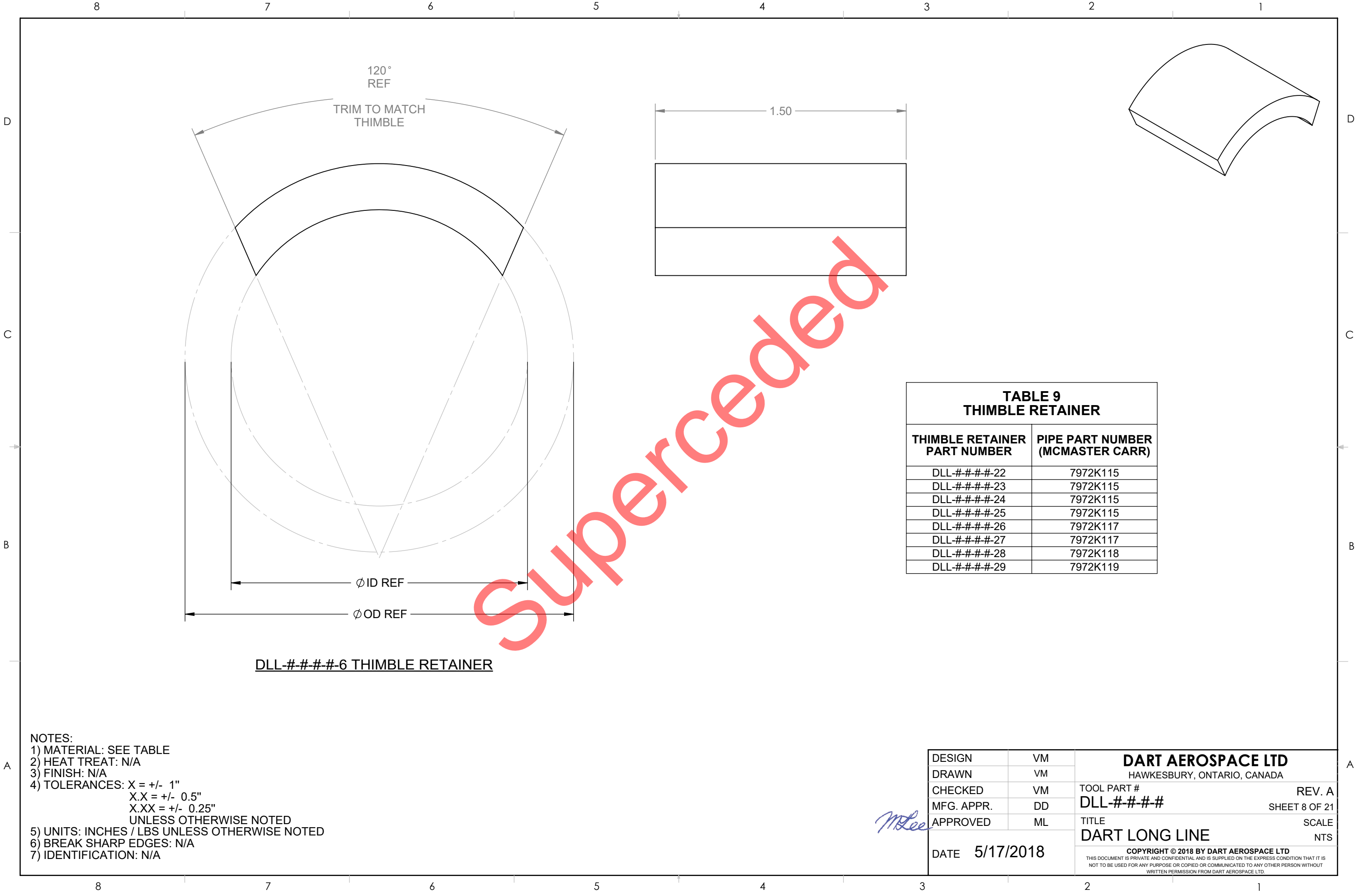
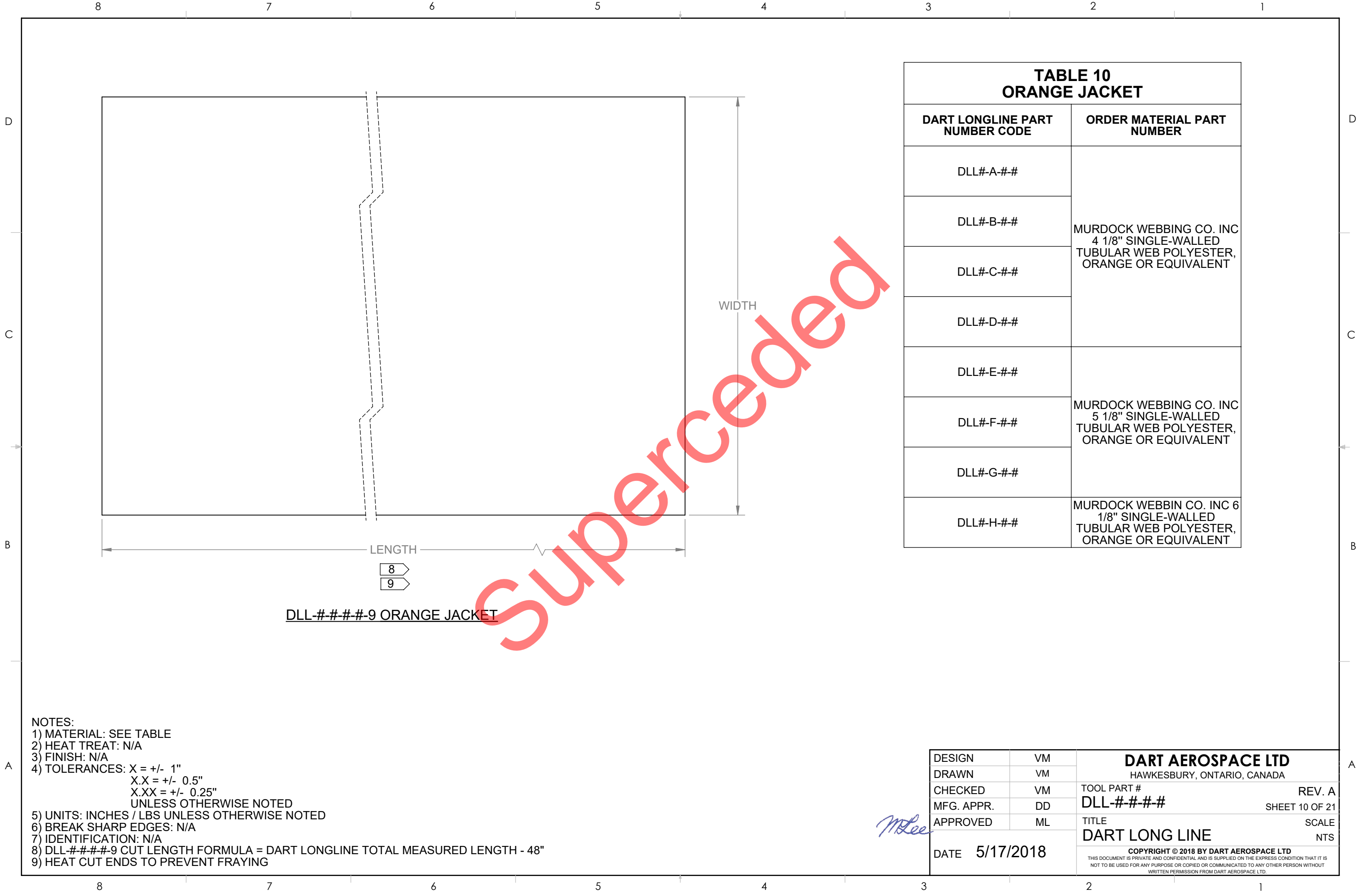
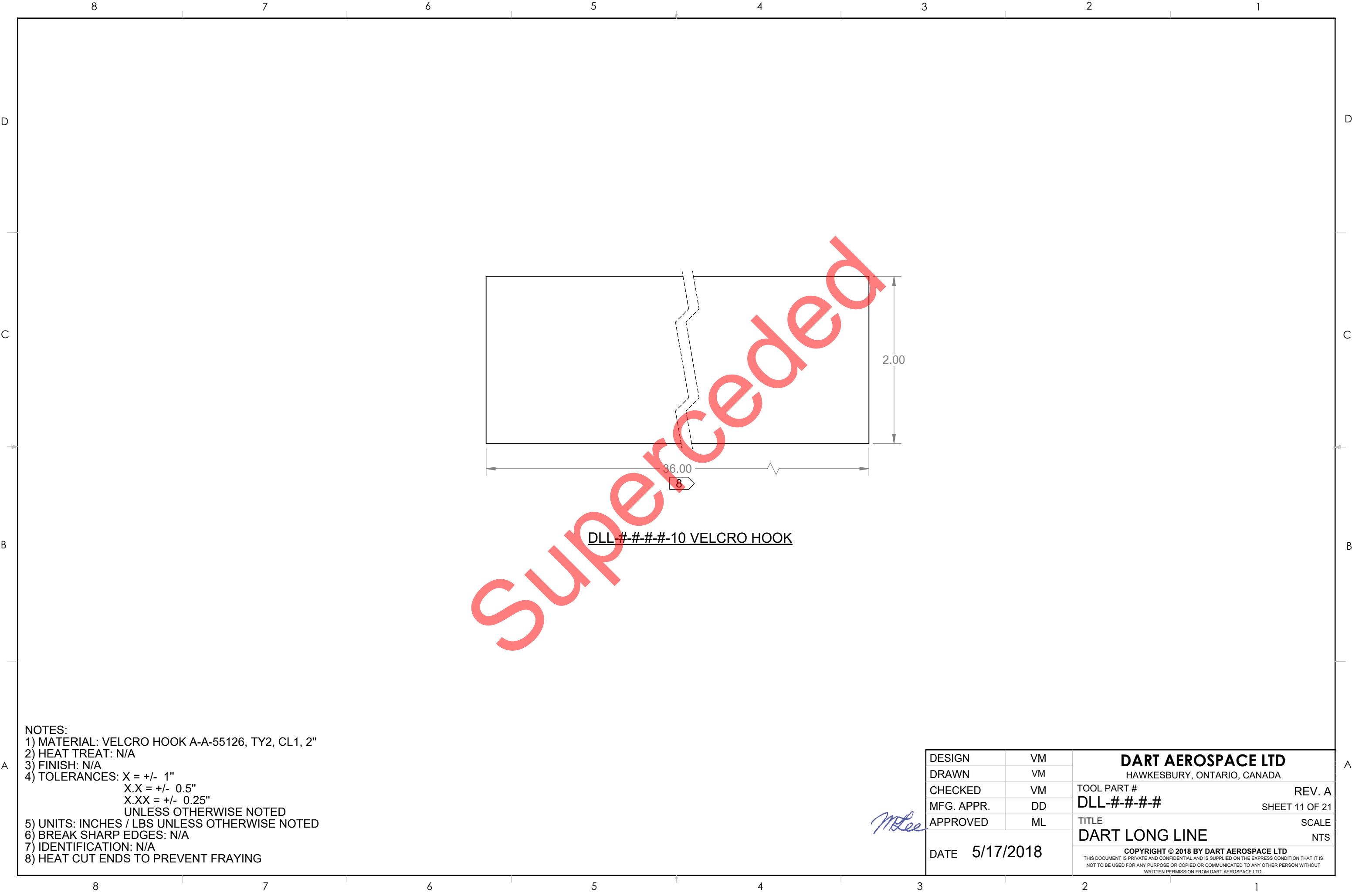


TABLE 9 THIMBLE RETAINER	
THIMBLE RETAINER PART NUMBER	PIPE PART NUMBER (MCMASTER CARR)
DLL-####-22	7972K115
DLL-####-23	7972K115
DLL-####-24	7972K115
DLL-####-25	7972K115
DLL-####-26	7972K117
DLL-####-27	7972K117
DLL-####-28	7972K118
DLL-####-29	7972K119

NOTES:
1) MATERIAL: SEE TABLE
2) HEAT TREAT: N/A
3) FINISH: N/A
4) TOLERANCES: X = +/- 1"
 X.X = +/- 0.5"
 X.XX = +/- 0.25"
 UNLESS OTHERWISE NOTED
5) UNITS: INCHES / LBS UNLESS OTHERWISE NOTED
6) BREAK SHARP EDGES: N/A
7) IDENTIFICATION: N/A

DESIGN	VM	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	VM		
CHECKED	VM	TOOL PART #	REV. A
MFG. APPR.	DD	DLL-####-	SHEET 8 OF 21
APPROVED	ML	TITLE	SCALE
DATE 5/17/2018		DART LONG LINE	NTS
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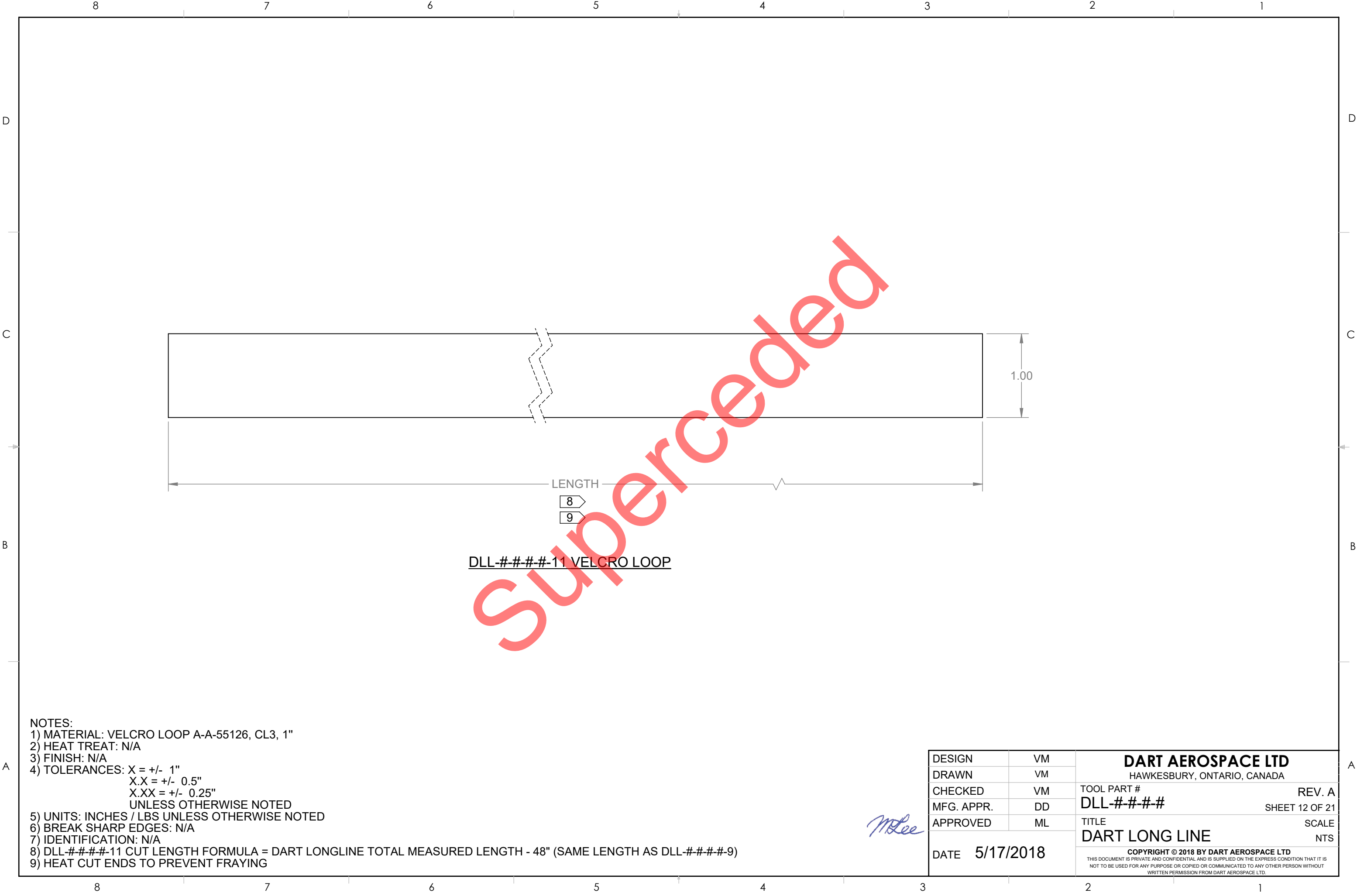




- NOTES:
- 1) MATERIAL: VELCRO HOOK A-A-55126, TY2, CL1, 2"
 - 2) HEAT TREAT: N/A
 - 3) FINISH: N/A
 - 4) TOLERANCES: X = +/- 1"
X.X = +/- 0.5"
X.XX = +/- 0.25"
UNLESS OTHERWISE NOTED
 - 5) UNITS: INCHES / LBS UNLESS OTHERWISE NOTED
 - 6) BREAK SHARP EDGES: N/A
 - 7) IDENTIFICATION: N/A
 - 8) HEAT CUT ENDS TO PREVENT FRAYING

M Lee

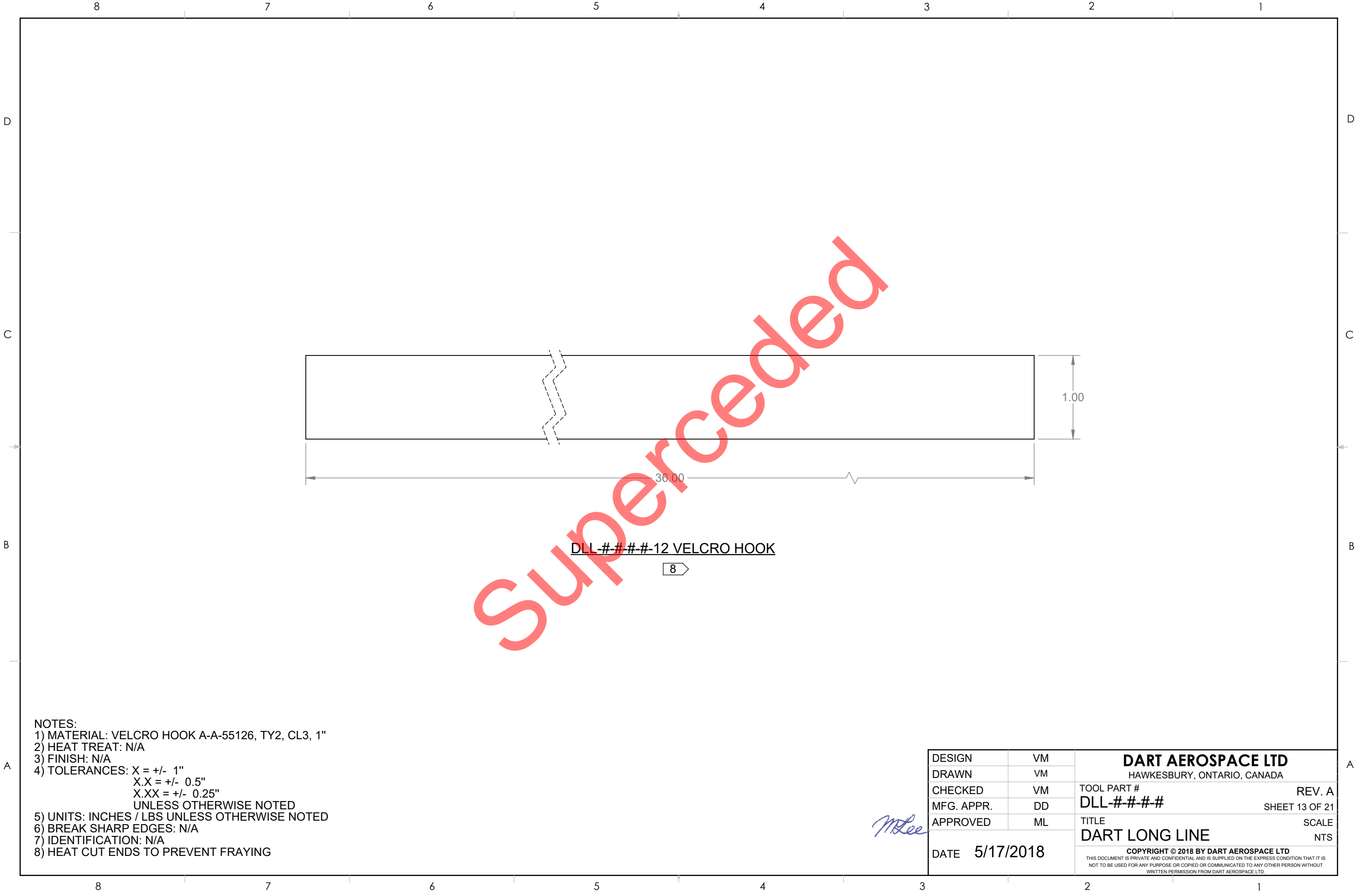
DESIGN	VM	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	VM		
CHECKED	VM	TOOL PART #	REV. A
MFG. APPR.	DD	DLL-###-#-#	SHEET 11 OF 21
APPROVED	ML	TITLE	SCALE
DATE 5/17/2018		DART LONG LINE	NTS
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NOTES:
1) MATERIAL: VELCRO LOOP A-A-55126, CL3, 1"
2) HEAT TREAT: N/A
3) FINISH: N/A
4) TOLERANCES: X = +/- 1"
 X.X = +/- 0.5"
 X.XX = +/- 0.25"
 UNLESS OTHERWISE NOTED
5) UNITS: INCHES / LBS UNLESS OTHERWISE NOTED
6) BREAK SHARP EDGES: N/A
7) IDENTIFICATION: N/A
8) DLL-###-11 CUT LENGTH FORMULA = DART LONGLINE TOTAL MEASURED LENGTH - 48" (SAME LENGTH AS DLL-###-9)
9) HEAT CUT ENDS TO PREVENT FRAYING

M. Lee

DESIGN	VM	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	VM		
CHECKED	VM	TOOL PART #	REV. A
MFG. APPR.	DD	DLL-###-#	SHEET 12 OF 21
APPROVED	ML	TITLE	SCALE
DATE 5/17/2018		DART LONG LINE	NTS
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NOTES:
1) MATERIAL: VELCRO HOOK A-A-55126, TY2, CL3, 1"
2) HEAT TREAT: N/A
3) FINISH: N/A
4) TOLERANCES: X = +/- 1"
 X.X = +/- 0.5"
 X.XX = +/- 0.25"
 UNLESS OTHERWISE NOTED
5) UNITS: INCHES / LBS UNLESS OTHERWISE NOTED
6) BREAK SHARP EDGES: N/A
7) IDENTIFICATION: N/A
8) HEAT CUT ENDS TO PREVENT FRAYING

M Lee

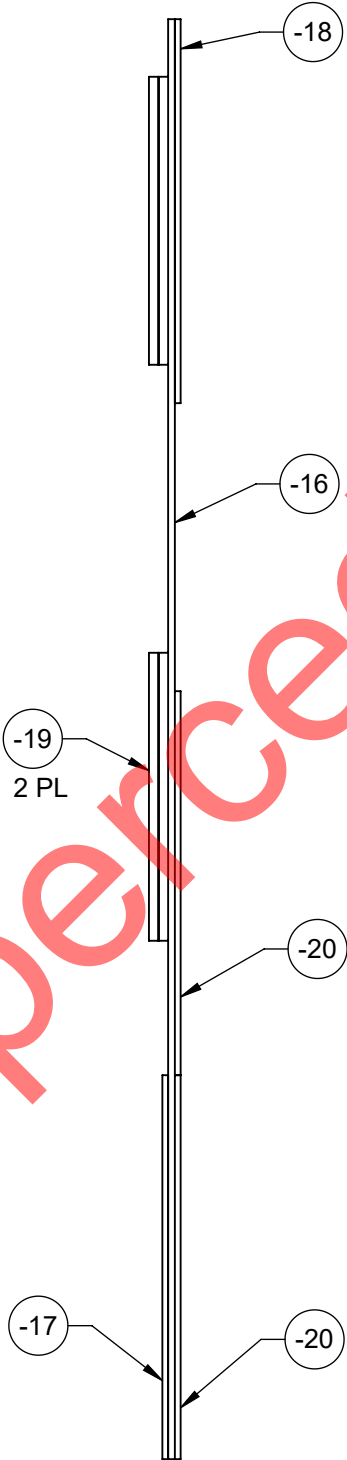
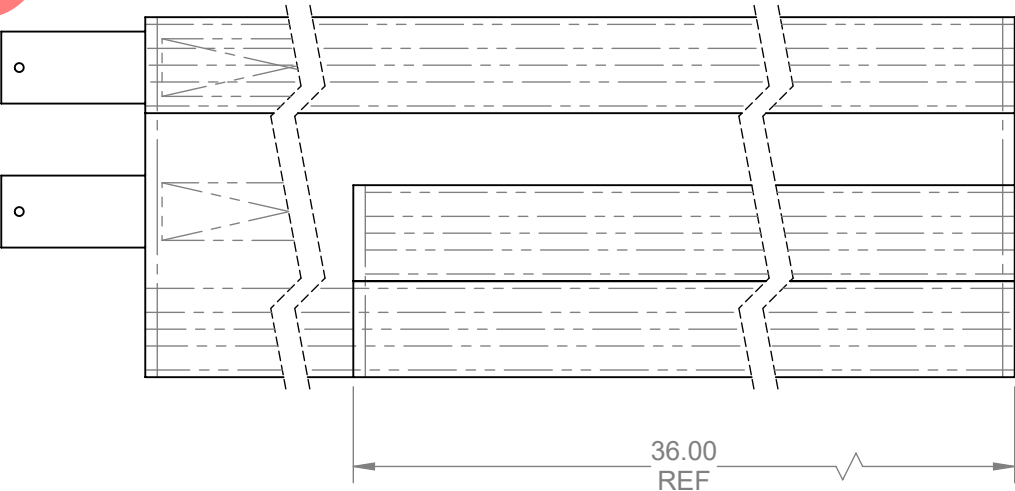
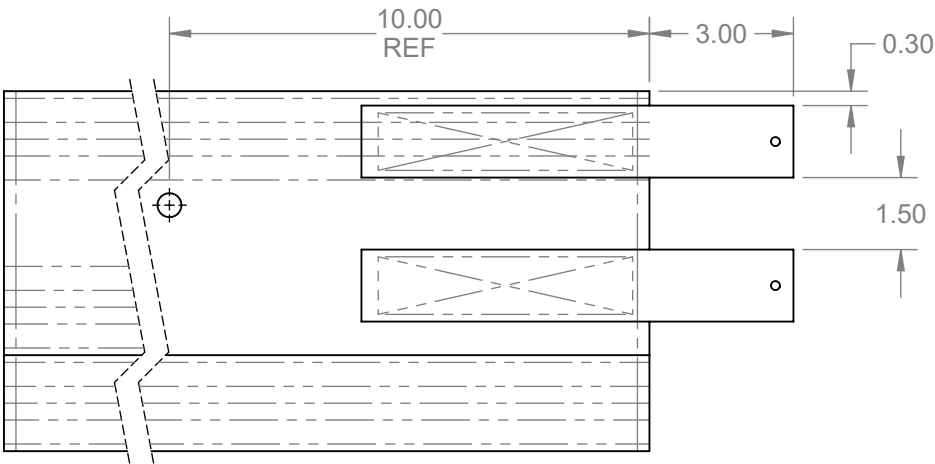
DESIGN	VM	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	VM		
CHECKED	VM	TOOL PART #	REV. A
MFG. APPR.	DD	DLL-###-#	SHEET 13 OF 21
APPROVED	ML	TITLE	SCALE
DATE 5/17/2018		DART LONG LINE	NTS
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- NOTES:
- 1) MATERIAL: VELCRO HOOK A-A-55126, CL3, 1"
 - 2) HEAT TREAT: N/A
 - 3) FINISH: N/A
 - 4) TOLERANCES: X = +/- 1"
X.X = +/- 0.5"
X.XX = +/- 0.25"
UNLESS OTHERWISE NOTED
 - 5) UNITS: INCHES / LBS UNLESS OTHERWISE NOTED
 - 6) BREAK SHARP EDGES: N/A
 - 7) IDENTIFICATION: N/A
 - 8) DLL-###-11 CUT LENGTH FORMULA = DART LONGLINE TOTAL MEASURED LENGTH - 48" (SAME LENGTH AS DLL-###-9)
 - 9) HEAT CUT ENDS TO PREVENT FRAYING

DESIGN	VM	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	VM		
CHECKED	VM	TOOL PART #	REV. A
MFG. APPR.	DD	DLL-###-#	SHEET 14 OF 21
APPROVED	ML	TITLE	SCALE
DATE 5/17/2018		DART LONG LINE	NTS
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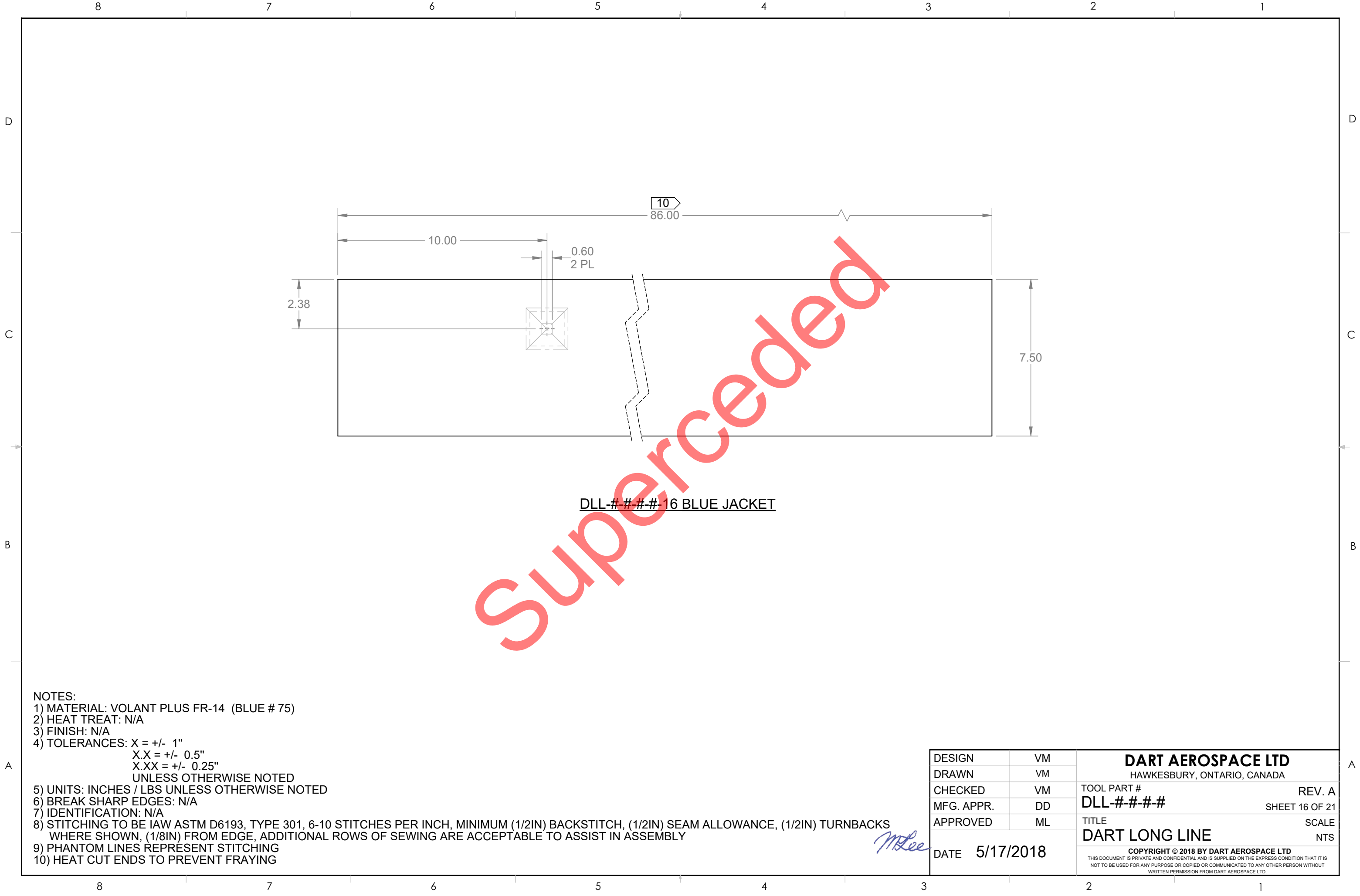
ITEM #	QTY	PART #	PART TITLE
-16	1	DLL-###-16	BLUE JACKET
-17	1	DLL-###-17	VELCRO HOOK
-18	1	DLL-###-18	VELCRO LOOP
-19	2	DLL-###-19	WEBBING
-20	2	DLL-###-20	VELCRO LOOP



NOTES:
1) MATERIAL: N/A
2) HEAT TREAT: N/A
3) FINISH: N/A
4) TOLERANCES: X = +/- 1"
X.X = +/- 0.5"
X.XX = +/- 0.25"
UNLESS OTHERWISE NOTED
5) UNITS: INCHES / LBS UNLESS OTHERWISE NOTED
6) BREAK SHARP EDGES: N/A
7) IDENTIFICATION: N/A
8) SEW ITEM -16, -17, -18, -19, -20 TOGETHER AS SHOWN
9) STITCHING TO BE IAW ASTM D6193, TYPE 301, 6-10 STITCHES PER INCH, MINIMUM (1/2IN) BACKSTITCH, (1/2IN) SEAM ALLOWANCE, (1/2IN) TURNBACKS
WHERE SHOWN, (1/8IN) FROM EDGE, ADDITIONAL ROWS OF SEWING ARE ACCEPTABLE TO ASSIST IN ASSEMBLY
10) PHANTOM LINES REPRESENT STITCHING

DLL-###-15 BLUE JACKET ASSY

DESIGN	VM	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	VM		
CHECKED	VM	TOOL PART #	REV. A
MFG. APPR.	DD	DLL-###-#	SHEET 15 OF 21
APPROVED	ML	TITLE	SCALE
DATE 5/17/2018		DART LONG LINE	NTS
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- NOTES:
- 1) MATERIAL: VOLANT PLUS FR-14 (BLUE # 75)
 - 2) HEAT TREAT: N/A
 - 3) FINISH: N/A
 - 4) TOLERANCES: X = +/- 1"
X.X = +/- 0.5"
X.XX = +/- 0.25"
UNLESS OTHERWISE NOTED
 - 5) UNITS: INCHES / LBS UNLESS OTHERWISE NOTED
 - 6) BREAK SHARP EDGES: N/A
 - 7) IDENTIFICATION: N/A
 - 8) STITCHING TO BE IAW ASTM D6193, TYPE 301, 6-10 STITCHES PER INCH, MINIMUM (1/2IN) BACKSTITCH, (1/2IN) SEAM ALLOWANCE, (1/2IN) TURNBACKS
WHERE SHOWN, (1/8IN) FROM EDGE, ADDITIONAL ROWS OF SEWING ARE ACCEPTABLE TO ASSIST IN ASSEMBLY
 - 9) PHANTOM LINES REPRESENT STITCHING
 - 10) HEAT CUT ENDS TO PREVENT FRAYING

DESIGN	VM	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	VM		
CHECKED	VM	TOOL PART #	REV. A
MFG. APPR.	DD	DLL-#-#-#	SHEET 16 OF 21
APPROVED	ML	TITLE	SCALE
DATE 5/17/2018		DART LONG LINE	NTS
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NOTES:
1) MATERIAL: VELCRO HOOK A-A-55126, TY2, CL1, 2"
2) HEAT TREAT: N/A
3) FINISH: N/A
4) TOLERANCES: X = +/- 1"
 X.X = +/- 0.5"
 X.XX = +/- 0.25"
 UNLESS OTHERWISE NOTED
5) UNITS: INCHES / LBS UNLESS OTHERWISE NOTED
6) BREAK SHARP EDGES: N/A
7) IDENTIFICATION: N/A
8) HEAT CUT ENDS TO PREVENT FRAYING

ML

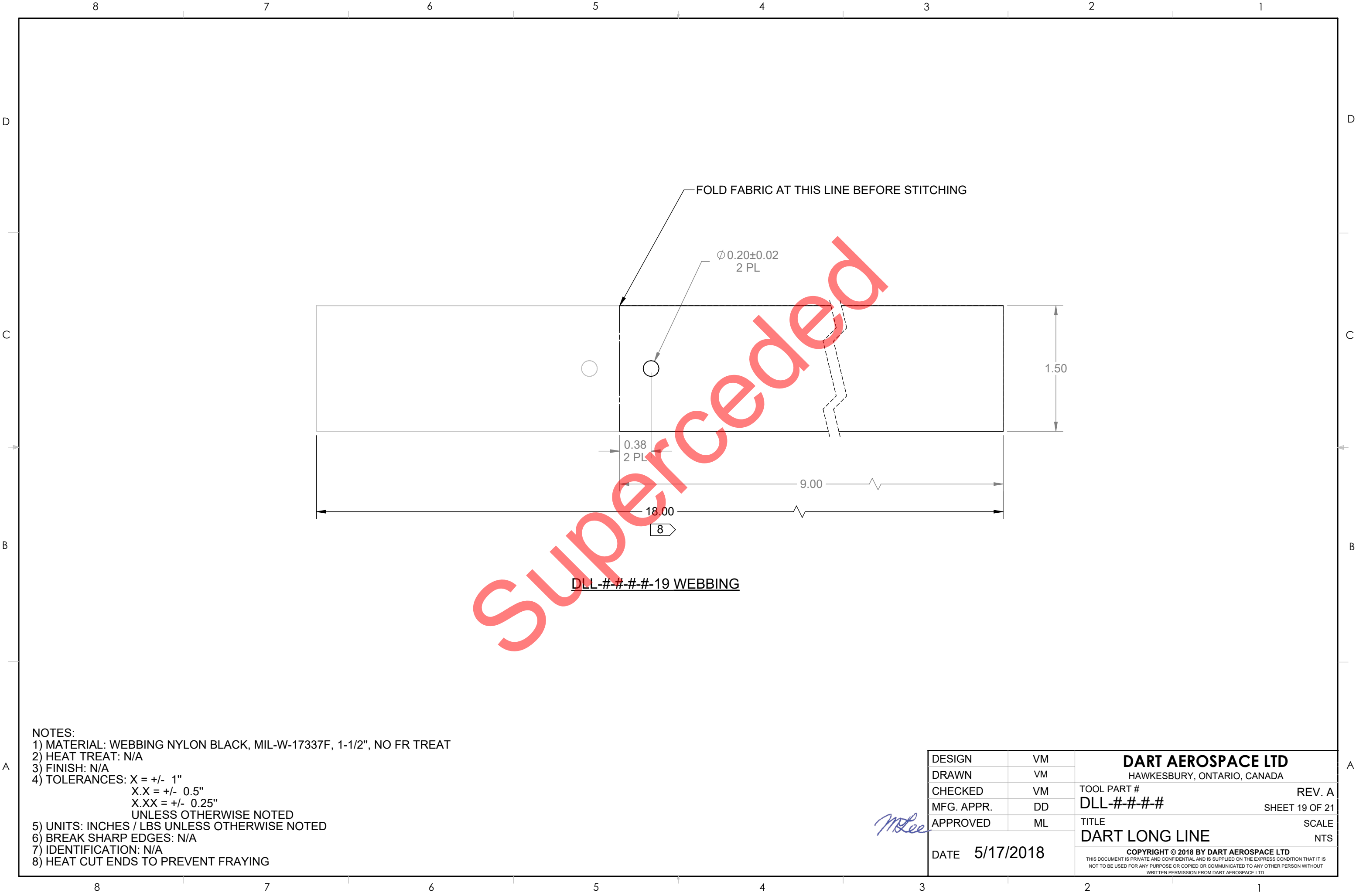
DESIGN	VM	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	VM		
CHECKED	VM	TOOL PART #	REV. A
MFG. APPR.	DD	DLL-#-#-#	SHEET 17 OF 21
APPROVED	ML	TITLE	SCALE
DATE 5/17/2018		DART LONG LINE	NTS
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- NOTES:
- 1) MATERIAL: VELCRO LOOP A-A-55126, TY2, CL1, 2"
 - 2) HEAT TREAT: N/A
 - 3) FINISH: N/A
 - 4) TOLERANCES: X = +/- 1"
 X.X = +/- 0.5"
 X.XX = +/- 0.25"
 UNLESS OTHERWISE NOTED
 - 5) UNITS: INCHES / LBS UNLESS OTHERWISE NOTED
 - 6) BREAK SHARP EDGES: N/A
 - 7) IDENTIFICATION: N/A
 - 8) HEAT CUT ENDS TO PREVENT FRAYING

M Lee

DESIGN	VM	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	VM		
CHECKED	VM	TOOL PART # DLL-#-#-#	REV. A
MFG. APPR.	DD	SHEET 18 OF 21	
APPROVED	ML	TITLE DART LONG LINE	SCALE NTS
DATE 5/17/2018		<small>COPYRIGHT © 2018 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.</small>	



- NOTES:
- 1) MATERIAL: WEBBING NYLON BLACK, MIL-W-17337F, 1-1/2", NO FR TREAT
 - 2) HEAT TREAT: N/A
 - 3) FINISH: N/A
 - 4) TOLERANCES: X = +/- 1"
X.X = +/- 0.5"
X.XX = +/- 0.25"
UNLESS OTHERWISE NOTED
 - 5) UNITS: INCHES / LBS UNLESS OTHERWISE NOTED
 - 6) BREAK SHARP EDGES: N/A
 - 7) IDENTIFICATION: N/A
 - 8) HEAT CUT ENDS TO PREVENT FRAYING

DESIGN	VM	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	VM		
CHECKED	VM	TOOL PART #	REV. A
MFG. APPR.	DD	DLL-###-#	SHEET 19 OF 21
APPROVED	ML	TITLE	SCALE
DATE 5/17/2018		DART LONG LINE	NTS
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